

Claims

1. Safety device (1) for the detachable clamping of elements that are moved relative to each other, particularly longitudinal guides,

a) with a base body (3), which can be traversed by a component (2) extending in an axial direction (Z) in such a manner that the base body and the components are two elements that are moved with respect to each other,

b) where the base body presents at least one clamp element (4), which presents at least one chamber (6) into which a medium can be admitted through a medium supply (8),

c) where a section of the chamber or an element coupled to it is designed to form a force transmission element (7) to transmit a clamping force on the component (2), and

d) where the clamp element (4) is designed so that when medium is admitted into the chamber (6) to produce an elastic change of its dimensions in a direction radial to the Z direction, it clamps or releases, via the force transmission element (7), the component in the radial direction relative to the base body,

characterized in that

e) the medium supply presents a valve (11), which can be actuated via an actuation element (10) that can be moved in the axial direction (Z).

2. Safety device according to Claim 1, characterized in that the actuation element (10) is arranged, or is part of, a weight body (12) that is guided in the axial direction (Z).

3. Safety device according to Claim 2, characterized in that the weight body (12) is arranged adjacent to the base body in the Z direction, where the weight body is connected with the base body in a manner so it can be shifted in the Z direction.

4. Safety device according to Claim 3, characterized in that the weight body can be moved relative to the base body from a position (S1) that closes the valve (11) into a position (S2) that opens the valve (11).

5. Safety device according to Claim 4, characterized in that the weight body is pressed by a force spring in the Z direction against the base body.

6. Safety device according to Claim 5, characterized in that the weight body, during a movement against the spring force, opens the valve (11), via the actuation element (10).

7. Safety device according to one of the preceding claims, characterized in that, when the valve (11) is opened, the clamp element (4) clamps the base body (3) relative to the component (2).

8. Safety device according to one of the preceding claims, characterized in that the valve (11) is closed by the movement of the weight body against the base body, to release the clamping of the component against the base body.

9. Safety device (101) for the detachable clamping of elements, particularly longitudinal guides, which are moved relative to each other,

a) with a base body (103), which can be penetrated by a component (102) extending in an axial direction (Z) in such a manner that the base body and the components (102) are two elements that are moved with respect to each other,

b) where the base body presents at least one clamp element (104), which presents at least one chamber (106) into which a medium can be admitted through a medium supply (108),

c) where a section of the chamber or an element coupled to it is designed to form a force transmission element to transmit a clamping force on the component (102), and

d) where the clamp element (104) is designed so that, when medium is admitted into the chamber (106) to produce an elastic change of its dimensions in a direction radial to the Z direction, it clamps or releases, via the force transmission element, the component (102) in the radial direction relative to the base body (103),

characterized in that

e) the medium supply line presents a valve (111), which can be actuated via an actuation element (110) that works in cooperation with the base body (103) in the axial direction (Z).

10. Safety device according to Claim 11 [sic], characterized in that the actuation element (110) is a part of a component substantially fixed relative to the component (102).

11. Safety device according to Claim 10, characterized in that the actuation element (110) is arranged adjacent to the base body (103) in the Z direction, where the base body is connected with the actuation element (110) in a manner that allows shifting in the Z direction.

12. Safety device according to Claim 11, characterized in that the base body can be moved relative to the actuation element (110) from a position closing the valve (111) into a position opening the valve (111).

13. Safety device according to Claim 12, characterized in that the base body (103) is pressed by a spring force (114) in the Z direction against the actuation element (110).

14. Safety device according to Claim 13, characterized in that the base body (103) during a movement away from the actuation element (110) opens the valve (111).

15. Safety device according to one of the preceding claims, characterized in that, when the valve (11, 111) is opened, the clamp element (4, 104) clamps the base body (3, 103) relative to the component (2, 102).

16. Safety device according to one of the preceding claims, characterized in that, as a result of the movement

a) of the weight body (12) against the base body (3),

or

b) of the base body (103) against the actuation element (110),
the valve (11, 111) is closed, to release the clamping of the component (2, 102) against the base body (3, 103).

17. Safety device according to one of the preceding claims, characterized in that the valve (11, 111) releases the medium from the medium supply line (8, 108) in the opened position in the environment or in a medium recycling line (8', 108').

18. Safety device according to one of the preceding claims, characterized in that at least one clamp element (4, 104) is an annular membrane surrounding the component (2, 102).

19. Safety device according to one of the preceding claims, characterized in that at least one clamp element (4, 104) is substantially made of metal.

20. Safety device according to one of the preceding claims, characterized in that the medium is air or a hydraulic medium.